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(54) Title: **VACCINES FOR SUPPRESSING IGE-MEDIATED ALLERGIC DISEASE AND METHODS FOR USING THE SAME**

mIgE-TT construct: Nucleotide and amino acid sequences  
(SEQ ID NOS. 5 & 6)

atggactggagctggtatctcttcttgggtggcagcagccagcgagctccactccactggg  
H D W T W I L F L V A A A T R V H S J H G  
Leader sequence

ctggctggcggctcccgagcagccagagggcccggtatgggtgctctgacctcccgga  
L A G G S A O S Q R A P D R V L C H S G  
mIgE

cagcagcgggagctgacgagagcagcagcagcgtctgcccccccccgcctgacactgt  
Q Q Q G L P R A A G G S V P H P R C H C  
mIgE

ggagccgggagggcgtgactgacaggtccccccagagctggagcgtgagcgtggagcagc  
G A G R A D W P C P P E L D V C V E E A  
mIgE

ggagcagcgggagcggcggcggcggcggcggcggcggcggcggcggcggcggcggcggc  
E G E A P W T W T G L C I F A A L F L L  
mIgE

gaggtgagcttcagcagcagcagcagcagcagcagcagcagcagcagcagcagcagcagc  
S V S Y S A A I T L L M V Q R F L S A T  
mIgE

cggcgggagggcccgagcctcctcagcagcagcagcagcagcagcagcagcagcagcagc  
R Q G R P Q T S L U Y T N V L Q P H A J R  
mIgE

gaaacaaagagctgttgggtgagcagcagcagcagcagcagcagcagcagcagcagcagc  
E K R A V V G Y D P N Y L R T D S D K D  
Protease cleavage signal TTp

agatctttacaaacatggttaaaactgttttaacagagcagcagcagcagcagcagcagc  
R F L Q T M V K L F N R I K R E K R A V  
TTp Protease cleavage

gttggllttaaataatcttaccgttagcttttgggttgggttctctaaagcgtatctgtagt  
V G F N N F T V S F W L R V F K V S A S  
Signal p301T

catttagaacatcatcatcatcatcatcat  
H L E H H H H H H -  
Flag

(57) **Abstract:** Nucleic acid molecules that encode a protein comprising at least one epitope of membrane IgE free of epitopes present on the serum IgE, including proteins that further comprise non-IgE T cell helper epitope are disclosed. Vaccines, vectors and host cells that comprise such nucleic acid molecules are disclosed. Isolated proteins, including haptenized proteins, comprising at least one epitope of membrane IgE free of epitopes present on the serum IgE, including proteins that further comprise non-IgE T cell helper epitope are disclosed. Vaccines that comprise and methods of making such proteins and antibodies that specifically bind to such proteins are disclosed. Killed or inactivated cells or particles, including haptenized killed or inactivated cells or particles, that comprise a protein comprising at least one epitope of membrane IgE free of epitopes present on the serum IgE, including proteins that further comprise non-IgE T cell helper epitope are disclosed. Vaccines that comprise such killed or inactivated cells or particles are disclosed. Methods of treating and preventing IgE mediated allergic disease or condition are disclosed.